WILL CARRY VESSELS.

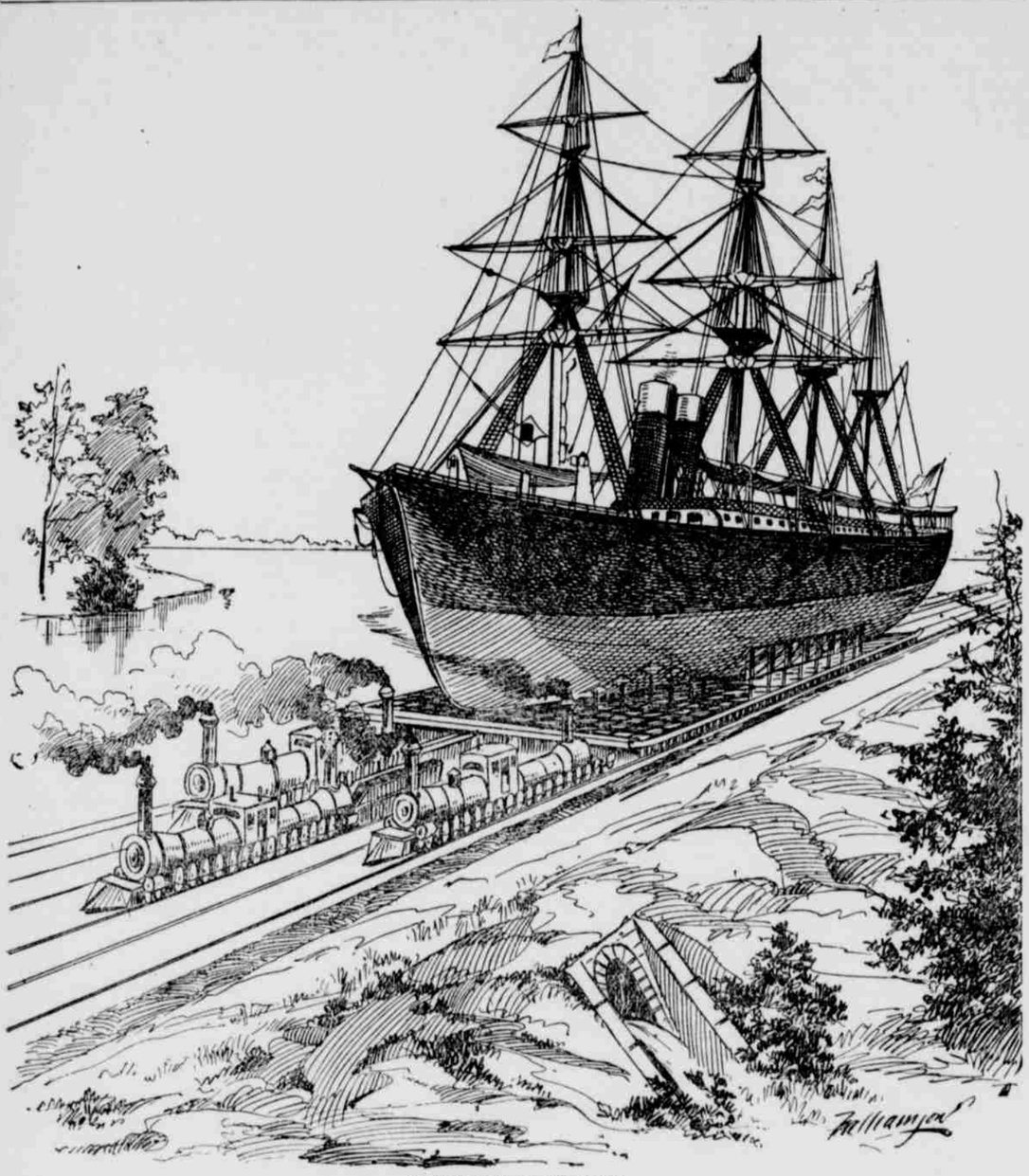
PLANS OF THE ONTARIO SHIP RAILWAY COMPANY.

No Doubt of the Feasibility of the Scheme in the Minds of Those Who Are Interested in It—It Will Save 300 Miles of Tortuous Navigation.

To Transport Ships.

At the last session of the Ontario Legislature an act was passed incorporating the Ontario Ship Railway Company. The project of this company is to build a three-track railway from Toronto on Lake Ontario to Collingwood on Georgian Bay in Lake Huron for the purpose of hauling lake vessels between those two points. The plans are substantially the same as those prepared for the Tehuantepec Ship Railway, projected by the late Capt. James B. Eads, and of which Mr. Corthell is now the engineer.

Simply stated the plans provide for basins or docks at the terminals, which can be emptied and filled at will, and where the vessels can be floated on and off the enormous car designed to transport them. On the car the vessels will rest securely on cradles. The car itself will be drawn by six or more powerful locomotives. The accompanying illustration will give a clearer idea of the ship railway than can be conveyed in a description.



A STEAMER IN TRANSIT.

From Toronto to Collingwood the proposed route is practically a straight line, but on the Tehuantepec route there are several deflections which give rise to the necessity of building water turn-tables, it being impossible to haul the long car around curves. At the turn-table the vessel is floated, turned in accordance with the direction of connecting line, reloaded, and sent on its way.

Mr. Corthell said the completion of the Ontario line would save 300 miles of tortuous navigation through the St. Clair River, Lake Erie, and Niagara Falls. It would take directly from Lake Huron into Lake Ontario traffic which now stops at Buffalo. Vessels from Chicago to Duluth drawing twenty feet could go to Ogdensburg and down the St. Lawrence, nearly 200 miles farther east than they can go now.

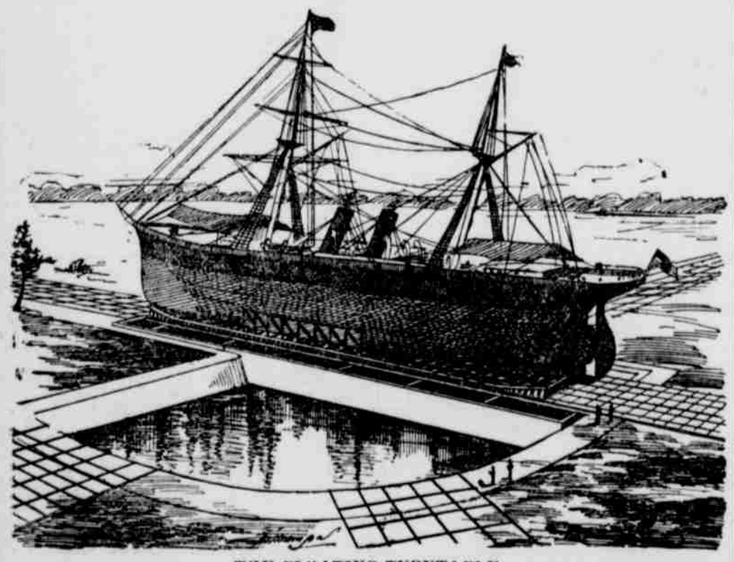
"Ten important ports on Lake Ontario and the whole Atlantic seaboard," said Mr. Corthell, "would be vastly benefited, to say nothing of the West and Northwest, because loads could be carried so much farther before breaking bulk."

The length of the proposed line is sixty-six miles through a comparatively level country, where no rock is encountered. Mr. Corthell's estimate of the cost is $15,500,000.

Conception of the Scheme.

The Ontario Ship Railway is a development of the Ontario ship canal. As far back as 1846 an examination was made of the territory between the Georgian Bay and Toronto by Mr. Kivas Tully, one of Toronto's best-known citizens, so as to decide as to the feasibility of building a ship canal between these two points. In 1851 and 1855 he made a further examination. It must here be borne in mind that this was the old Indian route between Lake Ontario and the north. Mr. Tully's examination was made at the instance of the Toronto Board of Trade. Col. R. B. Mason, of Chicago, made a survey along with Mr. Tully in 1855, and maps and plans of the project were published in 1858. The estimated cost of the canal was fixed at $22,170,150. The length of the route by the way of Lake Simcoe was 100 miles, with fifty locks 265 feet in length, fifty-five feet in width, and twelve feet lift. A company was formed in 1856 for carrying on the project, but in 1865 the charter was amended under the name of the Huron and Ontario Ship Canal Company.

In 1881 the late Captain James B. Eads, one of the greatest engineers in the world of his day, when projecting the ship railway across the Isthmus in Mexico, was requested by the Hon. D. Blain, Mr. Tully and others to give an opinion as to the practicability of the Ontario ship railway project. He pronounced it entirely practicable, and



THE FLOATING TURNTABLE.

that the land was admirably suited for the purpose. This opinion was given by Captain Eads after considering the matter for several years. The length of the proposed road will be sixty-six miles. There will be three tracks of standard gauge, with rails 110 pounds to the yard. Associated with Captain Eads at the time was Mr. E. L. Corthell of Chicago, who is one of the promotors of the present road, and who is finishing the works projected by Captain Eads and left unfinished. After examining the route, and before becoming one of the provisional directors, Mr. Corthell read a paper before the Canadian Society of Civil Engineers in 1881. In this paper he discussed the various schemes that occurred to him as likely to relieve the congested condition of the carrying trade from the West. In this paper Mr. Corthell, while not expressing any decided opinion, shows by his conclusion that the Ontario ship railway scheme is by far the most practicable, the cheapest, and in fact the only feasible one, while at the same time holding out the promise of good profits.

Huge Water Turntables.

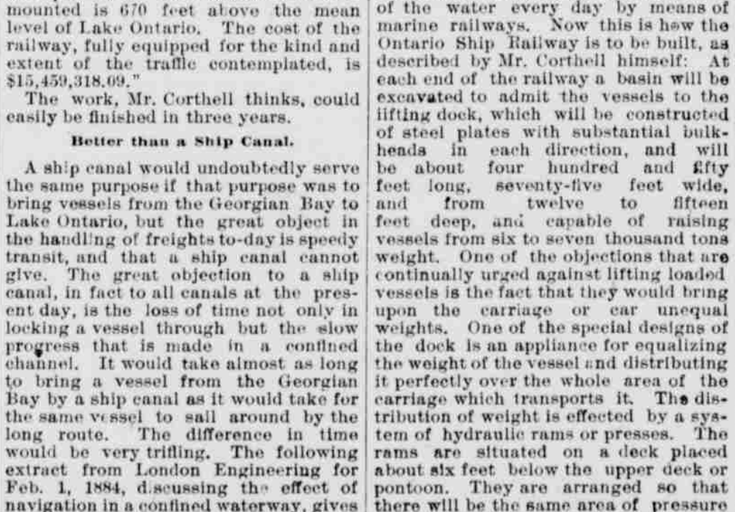
Mr. Corthell says he estimates, on the basis of a ship railway of larger capacity than was contemplated by Mr. Eads, that is for vessels of a displacement weight of 5,000 tons, with a draught of twenty feet, and the railway to be capable of transporting during the navigation season 8,000,000 tons of traffic.

"It is impracticable, except at great cost, to build the railway on a straight line between the two terminal points. There will necessarily be in the center part of the route two and perhaps three deflections, tables for changing direction. The grades, as ascertained from all available data, will be thirty-three feet per mile of a maximum, although on the larger part of the route the grades will be eleven feet and fourteen feet per mile. The summit to be surmounted is 670 feet above the mean level of Lake Ontario. The cost of the railway, fully equipped for the kind and extent of the traffic contemplated, is $15,459,318.09."

The work, Mr. Corthell thinks, could easily be finished in three years.

Better than a Ship Canal.

A ship canal would undoubtedly serve the same purpose if that purpose was to bring vessels from the Georgian Bay to Lake Ontario, but the great object in the handling of freights to-day is speedy transit, and that a ship canal cannot give. The great objection to a ship canal, in fact to all canals at the present day, is the loss of time not only in locking a vessel through but the slow progress that is made in a confined channel. It would take almost as long to bring a vessel from the Georgian Bay by a ship canal as it would take for the same vessel to sail around by the long route. The difference in time would be very trifling. The following extract from London Engineering for Feb. 1, 1884, discussing the effect of navigation in a confined waterway, gives scientific confirmation to our statement: "It is a universally recognized fact that vessels steer better, are more easily propelled, and are altogether more manageable when moving through a capacious waterway. The vessel in motion has to be forced through the water, and the particles are pressed one against the other and in confined spaces against the bottom and the sides. Thus a great friction is kept up, which reacts against the hull, deadens her speed, and at the same time prevents an equitable flow of water to her rudder, and, in the case of a screw, to the propeller also, and as a consequence the vessel becomes unmanageable.

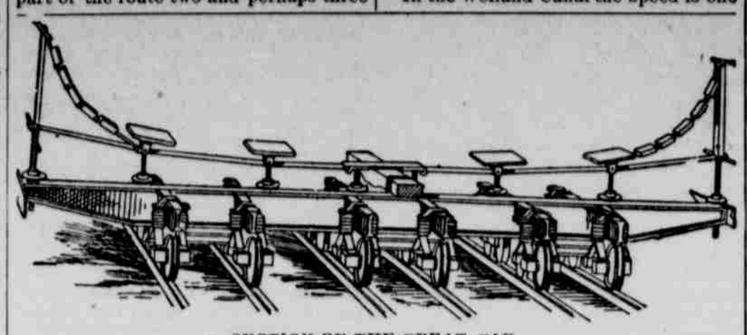


THE LIFTING PONTOON AND RAILWAY CRADLE.

"When a craft going at even moderate speed—'smells the bottom,' as the term is—she probably ends in running ashore athwart the navagation."

Fast Time Impossible.

In the Welland Canal the speed is one



SECTION OF THE GREAT CAR.

mile per hour, and the same in the North Holland ship canal to the port of Amsterdam. In the Suez canal, the most important canal in the world, the time to pass through 100 miles is fifty hours, or a rate of two miles per hour, with about fifteen miles of this distance through open lakes. The speed by regulation is limited to five miles, but at this speed vessels run aground.

Then again there is the relative cost of a ship railway and a canal to be considered, with the odds far in favor of the former. The Welland canal which is only twenty-six and three-quarter miles; cost the government, in round numbers, $24,000,000. A ship canal from the Georgian Bay to Lake Ontario would cost at the very least double this sum, and the water on the meter sills is only fourteen feet deep. To increase this depth to twenty feet would cost almost as much more. Compare with this the cost of a ship railway, which is fixed by Mr. Corthell at $15,459,318.09. A ship railway can bring a vessel easily at the rate of ten miles an hour, or from end to end of the ship railway in about seven hours. Mr Corthell has compiled a very interesting statistical table, which was given in his address before the Canadian Society of Civil Engineers in 1891. The sailing distance from Chicago to Montreal by the Ontario Ship Railway is 1,001 miles as against the distance by the Welland canal 1,263 miles, a saving of 262 miles. The sailing time from Chicago to Montreal by the Welland canal is 126.58 hours, via the Ontario Ship railway 93.14 hours, or a saving of thirty-three hours. The estimated cost per ton over the ship railway is three and four-tenth miles per ton per mile. This includes the cost of operation of the ship railway and 6 per cent. on the cost of construction. The cost per mile from Chicago to Liverpool by the Ontario Ship Railway is estimated at $3.48, by the Welland canal $3.97, by rail to Montreal $6.25; by rail to New York $6.74. The distance by the Ontario Ship Railway, 4,226 miles, and time 313.47 hours; by the Welland canal, 4,488 miles, and time 346.91 hours; by rail to New York, 4,353 miles, and 337.33 hours; by Montreal, 4,062 miles, and 328.32 hours. All the considerations of cost of construction, cost of operation and speed show in favor of the Ontario Ship Railway project, as compared with a ship canal or with any proposed route. It remains now but to give a description of the principle upon which the road is to be constructed and the method of transit.

The Old Canoe Portage.

The principle of a ship railway is no new one. It was practiced from time immemorial. The cane portage is a ship railway in embryo. Larger vessels have been hauled at various times overland. Four hundred years before Christ the Athenians transported their galleys over the Isthmus of Corinth. Charles XII. of Sweden in 1718 transported some vessels fourteen miles by rolling machines at the siege of Fredericksshall. Large ships are hauled out of the water every day by means of marine railways. Now this is how the Ontario Ship Railway is to be built, as described by Mr. Corthell himself: At each end of the railway a basin will be excavated to admit the vessels to the lifting dock, which will be constructed of steel plates with substantial bulkheads in each direction, and will be about four hundred and fifty feet long, seventy-five feet wide, and from twelve to fifteen feet deep, and capable of raising vessels from six to seven thousand tons weight. One of the objections that are continually urged against lifting loaded vessels is the fact that they would bring upon the carriage or car unequal weights. One of the special designs of the dock is an appliance for equalizing the weight of the vessel and distributing it perfectly over the whole area of the carriage which transports it. The distribution of weight is effected by a system of hydraulic rams or presses. The rams are situated on a deck placed about six feet below the upper deck or pontoon. They are arranged so that there will be the same area of pressure on every cross line. These cross lines are spaced six feet seven inches apart, and the number in each line corresponds to its position under the vessel; those under the midship section of the vessel having seven rams; those nearer the bow or stern five and then three rams; while under the bow and stern the whole supporting area is concentrated in one ram. These rams are also arranged in seven longitudinal lines, one, composed of the most powerful rams, under the keel and one on each side under the bottom, bilges and sides of the vessel. These rams, 130 to 150 in number, are all connected.

The harbor improvements at the termini will not be expensive.

Short and Serious.

You laugh at some people; others laugh at you.

It is a pity there are no rules without exceptions.

Every man is religious when he is scared to death.

People who have nothing to give are the only cheerful givers.

He who is useful is the incarnation of the highest religion or creed.

Whenever you find a comfortable place, you are sure to catch a cold in it.

By the time a man acquires a little sense, he is too old to take advantage of it.

"Some people have a good time at a funeral. I never could."—Parson Twine.

The longer a man has been dead, the less positive his friends are that he is with the angels.

The man who has the worst reputation is the one who is always worrying about having it injured.

Almost any man will extend a helping hand to a friend in trouble, if it is not asked that he have silver in it.

When you hear a great deal of one side of a story, the other side receives from you a great deal of sympathy.

As men have never been able to be perfectly good, so they have never been capable of being entirely evil.

Probably one reason so many nice girls marry poor husbands is that they never meet any other kind of men.

There is no greater misfortune that can befall a woman than to let a man marry her believing she is an angel.

Before you do wrong, sit down and reflect what few untraveled roads there are by which a guilty man may escape.

A child is an excellent chaperone; when a child goes anywhere, it comes back to tell everything it sees and hears.

When men and women are married, they begin paying themselves the compliments they formerly paid those they married.

When your friends attend your funeral, they will not be half so sorry you are dead as they will be glad that it is you instead of them.

The trouble with men and women is that they deliberately shut their eyes to each other's faults, and then accuse each other of deceit.

There are many fierce tigers in the world, but millions of people are never harmed by them and have no fear of them. They get out of their way. There are many other dangers that lose their terror when people treat them in the same way.—Atchison Globe.

Five Cents for Six Lives

Human life is dull and in small demand—spot cash five-sixths of a cent each person—at Belden's Point, on City Island, says the New York Herald. These figures are the result of the sad experience of Edward Gallagher, of 330 West Forty-second street. Edward is a newsboy, sometimes called "Swipes the Newsboy," as a compliment to his ability. He is not the original "Swipes." Edward is 16 years old, black-eyed, brown-haired, and small. What his muscular development lacks in quantity it more than makes up in quality. He sold a big armful of newspaper between this city and City Island recently and then went rowing near Belden Point. Four men and two women who had sailed up from Greenpoint in the small sloop Agnes went in bathing at half-past 6 o'clock, so "Swipes" says. Three of the men and the women presently got into a skiff and paddled out into the Sound, followed leisurely by the fourth man, who swam. Two hundred yards from the shore he grew tired, tried to climb into the skiff over the side instead of the stern, and upset it. "Swipes" said he rowed fiercely to the rescue and saved them all. "They made me weary," he confided to the reporter. "When I began taking them in all the men could say was, 'We're all lost!' Soon's I got 'em ashore one says, 'Johnny, that was great work you done. I'm goin' to take up a c'lection.' He passed the hat and raised 30 cents out of all their clothes. When he give it to me he says, 'You're only a boy, you kno,' an' I gave him back his quarter an' says, 'Yes, an' I ain't goin' to overcharge you. The hull gang of yer ain't wort' more'n fi'pence.' Then I skipped."

Gladstone as a Poet.

Like many others who have attained eminence of some sort or another when they have arrived at maturity, Mr. Gladstone had the Wegg-like habit of dropping into poetry in his early years, and very indifferent poetry it was, too, as the volumes of the Eton Miscellany remain to testify. It was no better, and it could not well be worse, than the juvenile verse of Mr. Ruskin, which that singular author, or his foolish admirers, will not willingly let die. Here is a specimen of the youthful verse of Mr. Gladstone, and if we were to consider it curiously it might almost be said to indicate his political future—at any rate, his political sympathies. Its hero is the hero of one of Southey's early epics—we think it was an epic, but it may have been a tragedy—Wat Tyler, concerning whom the Gladstonian muse thus delivered himself:

ODE TO THE SHADE OF WAT TYLER.

Shade of him whose valiant tongue
On high the song of freedom sung;
Shade of him whose mighty soul
Would pay no taxes on his poll;
Though swift as lightning, civic sword
Descended on thy fated head,
The blood of England's boldest poured,
And numbered Tyler with the dead!

Still may thy spirit flap its wings,
At midnight, o'er the couch of kings;
And peer and prelate tremble, too,
In dread of nightly interview!
With patriot gesture of command,
With eyes that like thy forges gleam,
Lest Tyler's voice and Tyler's hand
Be heard and seen in nightly dream.

THE SUNDAY SCHOOL.

SERIOUS SUBJECTS CAREFULLY CONSIDERED.

A Scholarly Exposition of the Lesson—Thoughts Worthy of Calm Reflection—Half an Hour's Study of the Scriptures—Time Well Spent.

The Apostles Persecuted.

The lesson for Sunday, Aug. 21, may be found in Acts 5: 29-42.

INTRODUCTORY.

We are giving a moving glimpse, in this lesson, of a church that got its directions straight from God, and straightly obeyed. No taking counsel, no disputing: What says the word?—that was enough. And so when the angel said "go," they went; when he said, "Go, stand in the temple," they went and stood in the temple; when he said, "Go, stand in the temple and speak to the people," they went, and stood and spoke. They did what they were told. And they got just what God promised they should have.

WHAT THE LESSON SAYS.

There came one, or, some one; indefinite.——Behold. Expressive of surprise and appreciension.——Standing in the temple and teaching the people. Compare with v. 20. They did just what they were told. The parallelism is more distinct in the original.

The captain. The sergeant-at-arms of the temple. Officers or attendants. His posse, or bodyguard.

Set them before the council; or, stood them, which would perhaps be more correct. The high priest asked them. A strong term, meaning to put through an examination.

Straightly command you. A Hebraism in the Greek; literally, with command command you.——In this name. Greek, upon this name. The basis of the teaching.——Your doctrine. Another case of unfortunate variant translation so common to the A. V. It is the same word as teach in this verse, a line or two above. Thus: that ye should not teach in this name, and behold ye have filled Jerusalem with your teaching.

And the other apostles. Others is added. Peter and the apostles is the Greek. Peter is doubtless here singled out as the spokesman of his fellows.——Ought, or must.——Obey. An interesting word. Compound in form, follow orders.

The God of our fathers raised up. This the main point with Peter, the resurrection of Christ.——Ye slew. Literally, took in hands. Their hands were stained with his blood.

Prince, or leader.——To give repentance, i. e., the privilege or opportunity of repentance.——Forgiveness of sins. Including the sin of hanging Jesus on the cross.

His witnesses. Compare this with the suggestive passage at John 15: 27. ("Ye also shall bear witness").——So is also the Holy Ghost. Compare with John 15: 26. ("He shall testify"—better, bear witness—"of me.") The apostles, like the Holy Spirit, were witnesses in a peculiar sense.——Obey. Same word as in v. 29. The Holy Spirit belongs to those who obey orders under Christ.

Cut to the heart. Not in the sense of grief, but perplexity, wholly without a way.——Took counsel, i. e., consulted together.——Slay, or destroy, to make away with.

A doctor of the law. Greek: Law-doctor.——In reputation or honored.——Commanded. Suggesting his influence and authority.

Take heed to yourselves. He advised them to be careful and to go slowly.——To do. Or to perform, as of an overt and public act.

Theudas. Josephus mentions such an impostor, who seems to be put, however, at another date. This may have been another Theudas, as the name was not uncommon.——Joined themselves. Literally, leaned upon, as the people on the word of Hezekiah, 2 Chron. 32: 8. (Margin.)——Obeyed him. Or believed, to be persuaded.

Taxing. Greek, registry. They were generally enrolled for the purpose of taxing.——Dispersed. A strong word; strewn, as the leaves by the wind.

Refrain. Or, draw away from. Same word as in verse 37 ("drew away much people."),——This counsel, or purpose, idea.

To fight against God. One word in the Greek: God-fighters.

Agreed. Or, were persuaded.——Beaten. The word implies the utmost cruelty, meaning to flog or scourge.

Departed. The word rejoicing is closely connected with this in the original. They left the presence of the council in a spirit of exultation.——Counted worthy to suffer shame. Worthy and shame are in distinct contrast.

In every house. Or, from house to house.——Preach. The word means good tidings.

WHAT THE LESSON TEACHES

We ought to obey God. "What are your marching orders?" said the great duke. That was sufficient for the loyal soldier of Christ. Oh, for an obedient church, a church that implicitly minds the order! God will take care of such a church. God will give the victory to such a church. We are staggering through unbelief; we are wavering because of slack loyalty. Lord, increase our faith!

If it be of God, ye cannot overthrow it. That is to say if it be not of God it will overthrow itself; but if of God man cannot overthrow it. This is another way for saying, as some one has well remarked, that that which is not planted in God has the seeds of destruction in itself. There is a profound philosophy here. The part cannot balance the whole, the mole-hill cannot jostle the mountain, the creature cannot circumvent the Creator. God is the changeless one, the everlasting one. Things and people are great according as they abide in him.

Sidney Lanier sang it in his "Songs of the Marshes:"

"As the marsh-hen secretly builds on the watery sod,
Behold I will build me a nest on the greatness of God;
I will fly in the greatness of God.
As the marsh-hen flies
In the freedom that fills all the space
'Twixt the earth and the skies;
By so many roots as the marsh grass casts in the sod,
I will heartily lay me ahold on the greatness of God."

Counted worthy to suffer shame. Now one sees what it is to rejoice in infirmities. These disciples thought it worthy to be counted unworthy for Jesus' sake, esteemed it an honor to suffer dishonor in his name. When loss for Jesus is regarded as gain, and disfavor incurred on his account is looked upon as advancement, then the disciple is in a fair way to be one of the rich of the earth. It is always possible in this world to suffer shame for Jesus; therefore the path of glory is ever open.

Next Lesson—"The First Christian Martyr." Acts 7: 54-60; 8: 1-4.

JAPANESE sacques made of light-tinted flannel and daintily cascaded with lace afford not only a protection against draughts when the patient is sitting up in bed, but they give an air of prettiness to the convalescent's surroundings.

TO TIGHTEN caneseat chairs turn up the chair bottom and wash the canework thoroughly with soapy water and a soft cloth. Let it dry in the sun and it will be as firm as when new, provided the cane has not been broken.

PANS and kettles will last much longer if they are placed before the fire a few minutes to get thoroughly dry inside. If put away in a damp condition they soon become rusty, and in a short time are quite unfit for use.

IF faith were always equal, where would be its merit?